Barrier Grouping 4

Form of the price offered to renewable developer/producers may not facilitate financing.

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INTRODUCTION:

Renewable projects generally are capital-intensive, and their on-going resource production costs generally are relatively low. At the same time, the prices paid for as-available energy produced by renewable facilities generally are based on the utility's filed avoided energy costs, which vary with the price of oil. Thus, there is a potential mismatch between the as-available renewable energy producer's cost structure, and the revenue stream for the renewable project. Moreover, even though the projected revenue stream may exceed the producer's projected costs, the uncertainty of the oil-price based revenue stream may make it difficult to obtain debt financing for the project.

Barrier 4.a — Tying the value of, and payments for, renewable generated electricity directly to the price of oil and other fossil fuels.

DEFINITION:

Generally, renewable projects are characterized as having high capital ("capacity") costs with relatively low production ("energy") costs when compared with oil-fired power plants. The prices paid for as-available energy produced by renewable facilities are based on the utility's filed avoided energy costs. There is no component for avoided capacity costs in the utility's filed avoided energy costs. Thus, there is a mismatch between the as-available renewable energy producer's cost structure, and the revenue stream for the renewable project.

DISCUSSION:

There is consensus that this is a barrier to the deployment of certain as-available renewable technologies.

Renewable projects generally are capital-intensive, and their on-going resource production costs generally are relatively low. At the same time, the prices paid for as-available energy produced by renewable facilities generally are based on the utility's filed avoided energy costs, which vary with the price of oil. Thus, there is a potential mismatch between the as-available renewable energy producer's cost structure, and the revenue stream for the renewable project. Moreover, even though the projected revenue stream may exceed the producer's projected costs, the uncertainty of the oil-price based revenue stream may make it difficult to obtain debt financing for the project.

The current legislatively-mandated mechanism for encouraging as-available renewable energy projects is the minimum floor rate. Under the PUC's Avoided Cost Rules, minimum floor rates are based on the avoided energy costs at the time as-available energy contracts are approved. H.A.R. §6-74-1 (definitions), 6-74-22(a). The minimum floor price does assure the project financing parties of a minimum cash flow (subject to the ability of the project to actually produce the energy projected for the project). However, minimum floor rates are not related to the cash flow necessary to make projects financeable. During periods of temporarily high short-run avoided costs, the mechanism may encourage the development of projects that would not otherwise be cost-effective in the long-run. During periods of temporarily low short-run avoided energy costs, the mechanism may be ineffective in encouraging the development of renewable energy projects that would otherwise be cost-effective in the long-run.

H.R.S. §269-27.2(c) provides that, if a public utility and supplier of nonfossil fuel generated electricity ("nonfossil fuel producer") do not reach agreement on purchase rates, the rates shall be prescribed by the PUC (and shall not be less than 100% of the utility's avoided costs). The subsection further provides that, in "determining the amount of the payment in relation to avoided cost," the PUC "shall consider, on a generic basis the minimum floor a utility should pay . . . ."

The PUC amended its Avoided Cost Rules in 1985 to implement this requirement. H.A.R. §6-74-22(a) requires that the rates payable for purchases from QFs be not less than 100% of avoided cost and not less than the minimum purchase rates, which are defined as the avoided energy costs in effect on the date that a legally enforceable obligation (which is defined as a binding contract, approved by the PUC) becomes effective.[1] The PUC has allowed some leeway in selecting the date used to establish the minimum rates.[2]

The application of the minimum rates has resulted in payment rates in excess of the utilities' filed avoided energy costs. Thus, the requirement for minimum purchase rates for nonfossil fuel producers may violate FERC's recent avoided cost cap rulings. See Re Connecticut Light & Power Co., Docket No. EL93-55-000, Order Granting Petition for Declaratory Order (FERC Jan. 11, 1995).

The Federal Energy Regulatory Commission ("FERC") has held that jurisdiction over the rates charged by QFs for sales at wholesale (which includes sales to public utilities) is vested in FERC, and that PURPA preempts state statutes or regulations that would require the payment of a rate in excess of avoided cost (determined in accordance with the FERC rules, as implemented by the States) to QFs. (FERC also held that its decision would not have retroactive effect, and that FERC will not entertain requests to invalidate pre-existing contracts where the avoided cost issue could have been raised, but was not.[3])

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1 H.A.R. §6-74-1. Although the rule, on its face, applies to QFs, the HECO utilities have taken the position that minimum purchase rates apply only to nonfossil fuel producers. This issue has been raised in a number of dockets, but has not been decided by the PUC.

2 Compare Re Hawaii Electric Light Co., Docket No. 6956, Decision and Order No. 11333 (Oct. 28, 1991) (Wailuku River Hydroelectric Power Co.) with Hawaiian Electric Co., Docket No. 6944, Decision and Order No. 11611 (May 7, 1992) (U.S. Windpower, Inc.)

3 Re Connecticut Light & Power Co., Docket No. EL93-55-000, Order Granting Petition for Declaratory Order (FERC January 11, 1995). The

The issue is whether a pricing structure can be developed that (1) facilitates the financing of capital-intensive renewable energy projects, and (2) is reasonable to the utility and its customers (i.e., provides power at a cost that is just and reasonable and provides assurances that the project will be sustainable in the long-term).

STRATEGIES:

Potential strategies include, but are not limited to:

Strategy 4.a.1 Continue and/or modify the application of minimum purchase rates for as-available renewable resources.

DISCUSSION:

If the minimum floor rate currently required by PUC rule is invalidated, Utilities could consider offering to as-available renewable energy developers a negotiated base energy rate over the term of the PPA that will act as a floor to protect the developer against declining oil prices and a corresponding declining avoided energy cost. In exchange for providing the security of a floor price, the Utilities could offer a schedule of ceiling rates over the term of the PPA based on a negotiated escalation rate. The schedule of ceiling rates would be below the forecast of avoided costs over the term of the PPA. This would provide protection to the utilities and its ratepayers against excessive payments to renewable resource projects which are not dependent on oil as the primary fuel, should oil prices rise dramatically.

The renewable resource developer would be paid the avoided energy cost calculated at the time of energy delivery (the quarterly filed avoided cost), subject to the bounds of the base energy rate and the ceiling rate over the term of the PPA.

VEHICLE: PPA negotiations, subject to PUC approval

AGENCY: Utilities, RE developers, PUC

FERC decision could be appealed to the United States Circuit Court of Appeals.

POSITION OF THE PARTIES:

PROPONENTS: heco, ke, d, r, ki, m, h, n, z

OPPONENTS: w

NO POSITION: p, i, krl, ers, ca

Strategy 4.a.2 Implement PPAs with fixed or more predictable (i.e., formula) payment streams for capital-intensive, as-available renewable resources.

DISCUSSION:

Utilities and RE developers could consider payment rates for renewables (which tend to be capital intensive) that more closely track the producer's cost structure, rather than the utility's oil-based avoided costs.

Fixed or formula rates based on overly pessimistic forecasts of fossil fuel prices have resulted in current PPA prices in other jurisdictions, such as California[4], that now exceed the utilities' current avoided costs in some cases, by a factor of four. As a result, utilities are reluctant to agree to long-term PPAs with fixed or formula rates unrelated to the utilities' avoided costs. See also discussion of front-end loaded prices under strategy 4.b.3.

VEHICLE: PPA negotiations, subject to PUC approval

AGENCY: Utilities, RE developers, PUC

POSITION OF THE PARTIES:

PROPONENTS: d, r, p, i, krl, w, n, ers, z

OPPONENTS: heco, ke

NO POSITION: ki, m, h, ca

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[4] In the mid-1980's, California added a substantial amount of as-available renewable energy to its utility systems by requiring standard offer contracts with a fixed capacity component and a fixed (but escalating) energy component based on its forecasts of future oil and gas prices.

Strategy 4.a.3 Apply an adder to filed avoided energy costs.

DISCUSSION:

There is no consensus that externality adders can be required. The topic of externality adders is addressed in Appendix B.

POSITION OF THE PARTIES:

PROPONENTS: d, p, w, krl, i, r, ers, z

OPPONENTS: heco, ke

NO POSITION: ki, m, n, h, ca

Barrier 4.b High initial costs of RE projects.

DEFINITION:

As discussed under barrier 4.a., renewable projects generally are capital-intensive. As a result, they tend to have high initial costs, which results in substantial financing requirements.

DISCUSSION:

There is consensus that the high initial costs of RE projects can make financing for such projects more difficult.

IPP projects are generally financed on a "project-finance" basis. As a result, the security available to lenders is the project itself, and the income stream under a power purchase agreement ("PPA").

The prices paid for as-available energy under such PPAs generally are based on filed avoided energy costs, which (in Hawaii) vary with the price of oil. As a result, potential lenders may discount the expected income streams under such PPAs, due to uncertainty with respect to future oil prices.

The current legislatively-mandated mechanism for encouraging the development of as-available renewable energy projects is a minimum floor rate. The rationale is that a minimum floor price assures the project financing parties of a minimum cash flow. However, as stated in the discussion of barrier 4.a., the requirement for minimum purchase rates for nonfossil fuel producers may violate FERC's recent avoided cost cap rulings. See Re Connecticut Light & Power Co., Docket No. EL93-55-000, Order Granting Petition for Declaratory Order (F.E.R.C. Jan. 11, 1995).

STRATEGIES:

Strategy 4.b.1 Use of tax credits that reduce the initial cost for RE projects.

DISCUSSION:

There are existing State tax credits based on the installation cost of certain renewable technologies. These should be maintained and/or improved. Tax credits are discussed under barrier 1.a.

VEHICLE: Legislation.

AGENCY: RE developers; Legislature.

POSITION OF THE PARTIES:

PROPONENTS: heco, ke, d, p, ki, h, krl, i, n, r, ers, z

OPPONENTS:

NO POSITION: m, w, ca

Strategy 4.b.2 Use of special purpose revenue bonds that reduce financing costs.

DISCUSSION:

Special purpose revenue bonds (which have lower interest rates due to exemptions from federal and Hawaii state income taxes) have been made available to certain IPP RE projects by Legislative authorization pursuant to H.R.S. Ch. 39A, Part V (assisting industrial enterprises). However, the amount of special revenue bonds is limited. Thus, RE developers would have to compete with the utility (which uses special purpose revenue bonds to develop their oil fueled power plants) and each other.

VEHICLE: Legislation.

AGENCY: RE developers; Legislature.

POSITION OF THE PARTIES:

PROPONENTS: heco, ke, d, p, krl, i, ki, m, h, n, r, ers, z

OPPONENTS:

NO POSITION: w, ca

Strategy 4.b.3 Consider front-end loaded prices, if adequate security is available.

DISCUSSION:

A fixed or formula price will often initially exceed current avoided costs, but result in projected prices that are lower than projected avoided costs. The PUC has approved firm capacity contracts with such pricing structures, where the total projected contract costs (on a discounted present value basis) were less than or equal to the total projected avoided costs (on a dpv basis). The PUC has also determined that a front-end loaded pricing structure for an as-available energy producer is not prohibited by its Avoided Cost Rules, and could be negotiated by the utility, subject to PUC approval on a contract-by-contract basis.[5]

The HECO utilities have not offered front-end loaded as-available energy contracts, maintaining that (1) the producer has no commitment (backed by a bond or security) to provide power in the tail-end period when the contract prices are projected to be below avoided costs, (2) the developer may be faced with increasing maintenance and decommissioning costs, (3) the ability to take over an abandoned facility would not be adequate security --the utility would inherit the problems which caused the project to be abandoned, as well as site clean-up liability, and (4) utilities (and their customers) should not have any obligation, in general, to make renewable projects financeable on a highly leveraged basis (i.e., with high debt/equity ratios).

KE has entered into front-end loaded PPAs with hydroelectric developers. KE indicated that it proceeds with this type of agreement cautiously, and that it attempts to minimize the risk associated with front-end loaded contracts by (1) investigating thoroughly the track record of the renewable producer, (2) by ensuring that the resource is a proper technology, and (3) contractually crafting safeguards to the utility and its customers.

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5 Re Maui Electric Co., Docket No. 6742 (Zond Pacific), D&O 12118 at 7.

RE developers requesting front-end loaded prices have maintained that (1) PPAs with such pricing structures would enable them to finance projects (which will be cost-effective in the long-term) during periods when oil-based avoided costs are temporarily low, (2) utility customers will benefit in the long-term when oil-based avoided costs are higher than the PPA prices, and (3) the project financing parties will ensure that the projects are viable in the long-term.

VEHICLE: PPA negotiations, subject to PUC approval.

AGENCY: Utilities, RE developers, PUC.

POSITION OF THE PARTIES:

PROPONENTS: heco, ke, d, p, krl, i, ki, m, h, n, r, ers, z

OPPONENTS:

NO POSITION: w, ca

Strategy 4.b.4. Consider the demonstrable life of the underlying asset of the RE project within reasonable limits, in determining the term of a PPA with a RE developer.

DISCUSSION:

Some RE projects, such as hydroelectric power plants, are expected to have substantial operational lives. PPAs with longer terms would allow the RE developer to seek financing for a longer term. The PUC's decision in Docket No. 7956 indicates that the service life of power purchase facilities should be considered in determining the duration of PPAs.

Some parties maintain that the term of a power purchase agreement should depend on factors other than the expected life of an RE project. Moreover, there will be reasonable disagreement over the expected life of a specific RE project. For example, there is limited experience with the new generation wind technologies and there are questions related to the life of the geothermal resource.

VEHICLE: PPA negotiations, subject to PUC approval.

AGENCY: Utilities, RE developers, PUC

POSITION OF THE PARTIES:

PROPONENTS: heco, p, krl, i, ke, d, w, n, r, ers, z

OPPONENTS:

NO POSITION: m, h, ki, ca